CHASSIS Lubricate for SAFETY every 1,000 MILES LUBRICATION

The Institute Spokesman

Published by
NATIONAL LUBRICATING GREASE INSTITUTE

VOLUME IV • NUMBER 10-11 FEBRUARY, 1941

*Lubrication of Automobile Bodies**

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The automobile as we know it today has reached a stage in design and construction where it has really become a part of the great American way of living—a traveling home on wheels — indispensable for both business and pleasure. This present day refinement of an automobile, particularly the body, was not brought about overnight, but is the result of years of painstaking effort on the part of engineers, designers, metallurgists, research men, production men, and countless others who are ever striving to bring about the ultimate in comfortable, economical transportation.

Today the average business man seated in his car can relax in comfort much as if he were in an easy chair at home or at his office. In the quiet surroundings of his closed car, regardless of weather conditions, he has time to think and do a great deal of his planning between business contacts or on his way to the office. From a pleasure standpoint also, long drives to distant points are less fatiguing and distance, as we used to know it, coupled with a smooth running car and good roads is greatly diminished.

Lubrication Should Be Maintained

To bring about this comfort and quietness in an automobile body, lubrication naturally has played a great part. The movable mechanical parts of a car body are lubricated at the factory for easy operation and to eliminate squeaks caused by frictional contact. This lubrication should be maintained and replenished at periodic intervals. For instance, when one considers the number of times a car door is opened and closed—even slammed, the number of times ventilators are opened and windows operated up and down, the various door handles rotated on their spindles during the life of a car, it is only reasonable to suppose that these parts are subject to wear and naturally are in need of lubrication and adjustment from time to time. Many parts on the body, although not mechanical, are adjustable and if through body distortion or wear these parts become misaligned or loose, a rattle or chatter will result. If such noises prevail, lubrication will not quiet them. Adjustable parts, if loose, should be readjusted, insulated and tightened. It is the easy, quiet, working ability of precisely made mechanical body parts that allows one to feel at home in his car and get the most out of it, without becoming nervous and irritable as a result of these annoyances.

Where to Lubricate and What to Use

For years, car manufacturers have recommended that the chassis points be lubricated every 1,000 miles. This 1,000 mile interval between lubrication of chassis points is necessary because experience has proven that at about this interval the oil contained in chassis greases has been depleted at the many heavily loaded frictional points, and a new supply should be added. However, most body lubrication points do not carry heavy loads like the chassis. Therefore, many of the body points do not require as heavy nor as frequent lubrication as the chassis points.

For body lubrication, a specific kind of lubricant, the one best suited for individual points, should be used. Knowing what to use and where to use it, coupled with a little care and cleanliness, will bring many returns in the satisfaction and pleasure of driving a car properly serviced.

Trained lubrication mechanics know the correct lubricant and how to apply it properly. They know that for exposed surfaces, such as door checks, door lock bolts, lock striker plates, dovetail bumper wedges, etc., a sparingly applied, thin film of clean, stainless grease, or other similar lubricant will be as lasting and more economical than a large, messy smear of any lubricant carelessly or thoughtlessly applied. They know that where oil holes are provided in the door hinges, a dripless oil can safely be used, but any lubricant should be used sparingly and after application all excess should be carefully wiped off. (All 1940 and 1941 door hinges without oil holes require no lubrication). These men know and are familiar with all points on a body where lubrication is required. For instance, they know that the driver's seat adjuster and seat track, ordinarily overlooked, should be lubricated with cup grease, graphite grease, or dripless oil—used sparingly.

Some Points Difficult to Lubricate

There are other points on bodies which may occasionally require lubrication and which are difficult to service. Window lifts and regulator controls are confined in the space between the upholstery and the outside door metal and, while it is possible in some cases to apply oil by drops to a long wire leading to the operating mechanism, it is not a practical procedure, as extreme care must be taken to keep the oil from contacting the upholstery on the inside of the door. Easy access to the working parts may be made by removing the upholstery, but this method should only be used by

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Seek Simplification and Improvement of Automobile-Lubrication Service

Simplification of motor-vehicle lubrication and improvement of lubrication service by reducing the number of types of lubricants required are being developed jointly by representatives of the petroleum and automotive industries.

The American Petroleum Institute's Committee on Lubrication, whose members have been consulting with automotive engineers, has prepared for both industries a tentative list of 22 types of lubricants which dealers and service stations featuring complete passenger-car lubrication should stock and use. The list as tentatively agreed upon contains four types of motor oil, four gear lubricants, nine general chassis lubricants, one lubricant for overdrive transmissions, and four optional lubricants for shock absorbers, hydraulic brakes, etc. It is believed that these lubricants will meet present requirements and that continued study of mutual problems will result in further simplification. Following is the complete list:

	Each Brand of Motor Oil — *Summer*	*Winter*	*Number of Products Required*
I. Motor Oils For:			
(1) Crankcase and Misc. Oil Can Lubr.	SAE 10 or 10W SAE 20 or 20W SAE 30 SAE 40	10W 20W	4
			4
II. Gear Lubricants For:			
(1) Conventional Transmissions (2) Rear Axles—all types. (3) Steering Gear Boxes (oil type) (4) Oil type Universal Joints (5) Overdrive Transmissions*	Universal Type Gear Lubricant SAE 80, 90 and 140		3
			1
III. Chassis Lubricants For:			
(1) General Chassis Fittings and Covered Springs (2) Steering Gear Boxes—grease type	Chassis Lubricant*		1
(3) Wheel Bearings (4) Universal Joints—grease type	Wheel Bearing Lubricant and No. 2 Cup Lubricant		2
(5) Distributor Grease Cups (6) Clutch Release Bearings (7) Water Pumps (Grease Lubricated)	Waterproof Grease Lubricant		1
(8) Rubber Bushings	Special Rubber Lubricant		1
(9) Wet Clutch (Hudson)	Special Wet Clutch Compound or other suitable product		1
(10) Special Spring Lubricant (Ford)	Special Asbestos-Talc Lubricant or other suitable product		1
(11) Open Springs and Automotive Heat Control Valves	Penetrating Oil or Flushing Oil		1
(12) Air Cleaners	SAE 50 Motor Oil		1
			13
IV. Special Products			
(1) Hydra-Matic Transmission (Cadillac & Oldsmobile) (2) Fluid Fly Wheel (Chrysler-DeSoto-Dodge)	Special Oil—to be serviced at car dealer only		
(3) Vacamatic Underdrive Transmission (Chrysler 6) (4) Simplimatic Transmission (DeSoto)	Special E. P. Lubricant		1
			1
V. Optional Products			
(1) Shock Absorbers—Piston Type (Delco and Monroe)	Special Light Bodied Shock Absorber Fluid		1
(2) Shock Absorbers—Vane Type (Houdaille)	Special Heavy Shock Absorber Fluid		1
(3) Hydraulic Brakes	Special Hydraulic Brake Fluid		1
(4) Door Latches, Strikers and Hood Lacings	Special Grease Stick		1
			4
	Grand Total		22

Note: Some car manufacturers recommend SAE 50 (winter) and SAE 70 or 60 (summer) motor oils for overdrive transmissions and that E P Lubricants shall not be used. These products will be required temporarily.

Note: Summer and winter grades now in general use. Summer grade temporarily desirable for older cars during summer season.

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experienced operators. It is usually advisable to refer such jobs to an authorized dealer who has the special tools and facilities with which to do the work as it should be done.

The convertible, power-operated top has made its appearance on 1940 and 1941 cars. This top is operated by two vacuum cylinders controlled by a two-way valve on the instrument panel. These cylinders (1 each side) are mounted between the body metal and upholstery, at each end of the rear seat. If any lubrication of the vacuum cylinders or their moving parts and connections becomes necessary, it should only be done by an authorized dealer.

Over-Lubrication

Records show that the driving public complains more of excess lubrication of bodies than of the lack of lubrication. This is why: If a soft, dark grease is applied to a door lock bolt or a dovetail wedgeplate on the exposed face of the door, and the driver and his lady are on their way to a social function, a slight brush across this soft, oozy grease may ruin a gown and spoil the entire evening for them and others. Too much lubrication applied to exposed parts serves no good purpose. It is not only a waste of material but is an indication of poor judgment.

Lubricate only where squeaks develop, or where conditions indicate that the addition of lubricant is desirable for easier operation of individual units or points.

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Material appearing in The Institute Spoke

The INSTITUTE SPOKESMAN

Published Monthly by THE NATIONAL LUBRICATING GREASE INSTITUTE

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498 Winspear Avenue, Buffalo. N. Y.

Home Study Courses on Lubricants and Fuels Offered

Designed to impart to sales personnel a wide, intelligent, conversational knowledge of lubricants and fuels, and the required understanding of their service value, a group of extension courses in the fundamentals of lubricants and fuels has just been announced by the Petroleum Educational Institute, Los Angeles. Primarily the material includes two courses, a 50-lesson course for general salesmen of automotive and industrial lubricants and fuels, and a 30-lesson course for service station salesmen. By using sections of the books, specialized courses are offered in Automotive Lubricants, Automotive Fuels, and Automobile and Industrial Lubricants.

Although the courses treat all phases of the oil industry, they major in sales and service, keeping always in mind their objective of educating the salesman so that he may increase his sales. The courses are well planned, the text material is simple and non-technical. They are illustrated with hundreds of drawings, sketches, and homely illustrations which make clear and understandable the technical subjects sales and service men should know. In a thorough and practical manner they present the application of lubricants and fuels so that sales and service men can understand and apply the information. The courses also contain much valuable reference material.

Authors of the courses are nearly a score of practical engineers, many of whom are actively engaged in the oil business. Among them are Clifford R. Stewart, W. I. Gieseke, Wallace Linville, E. W. Templin, L. L. Beardslee, Ulric B. Bray, L. J. Grunder, R. Cubicciotti, Carl Abell, R. F. Harms, G. A. Zamboni, Farley E. Beckett, and Harold E. Donaldson.

A. P. I., Standard Oil Co. of California, Union Oil Co. and others recommend this course.

For full details write Petroleum Educational Institute, 704 South Spring St., Los Angeles, Cal.

*Car Manufacturers' Latest Recommendations**

PONTIAC SEALED COOLING CAP

In all 1941 and some past model Pontiacs, the engine cooling system includes a spring loaded valve in the radiator filler cap to maintain a slight pressure (3¾ lb. per sq. in.) on the cooling solution. This raises its boiling point and permits the use of volatile type anti-freeze without danger of loss through evaporation on warm days. The sealed cooling cap also prevents loss of water through surging into the upper tank after the engine has been shut off following a hard drive in hot weather.

The filler cap must always be turned down tightly or there can be no pressure. The gasket in the filler neck is also important and should be inspected and replaced if it is damaged.

When removing the cap after coolant is hot, loosen it slowly. If a hissing is heard stop until it ceases, then turn further; if no more hissing is heard, continue to where a safety stop will be felt. If there is no further hissing, cap may be removed safely. If hissing continues in the safety position, wait until it ceases before removing the cap by turning past the stop.

After the engine has been run always loosen the cap slowly. A hissing noise will indicate that there is still pressure in the system. The cap should not be removed while hissing continues.

Unless the cap is removed slowly, the coolant may appear to be boiling due to agitation caused by the air and vapor escaping from the solution when the slight pressure is suddenly released. If the cap is released past the stop, before the pressure is relieved, some of the coolant may bubble over the filler neck and damage the car finish.

Don't overfill — Allow for expansion of cooling solution.

Remember that the cooling solution expands when hot, and that if the system is completely filled when the solution is below operating temperatures, a small amount will be blown through the valve in the cap and down the overflow pipe with a whistling noise when the engine is run.

Therefore, always allow for expansion by *filling only to a level 1½ in. below the gasket at the bottom of the filler neck.*

NEW BUICK MODELS

The addition of four new models to the 1941 Buick 40 Special line of cars, was announced January 31. The new cars, known as Series 40A, are built on a 118-in. wheelbase chassis and have 6 in. less overall length and new torpedo styled bodies with concealed running boards. Except for the shorter dimension, chassis are otherwise identical with the 121-in. wheelbase Buicks. All lubrication details are the same as for the Series 40 models. Lower prices feature the new models.

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Petroleum Tables Issued Covering Viscosity Index; Also Conversion for Saybolt and Kinematic Viscosities

Two tables recently published by the American Society for Testing Materials, Philadelphia, Pa., are of interest particularly in the field of petroleum products and lubricants; the pamphlets include viscosity index tables and conversion tables for kinematic and Saybolt viscosities and provide in durable and convenient form data which are widely used. Each table is based on and amplified from the respective A. S. T. M. standard methods. The tables were originally compiled by the Standard Oil Development Co.

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GOOD JUDGMENT NECESSARY

Some car manufacturers make their own bodies. Others purchase their bodies from Fisher, Briggs, Murray and other companies specializing in body construction. Also, some car manufacturers' instruction books cover body lubrication, while others do not mention the subject at all. There is no general yardstick that can be used to measure body lubrication requirements for all makes and models. So, after all, it sums up to the fact that plain common sense is the best guide to follow. Why take the household oil can and squirt oil on glove compartment hinges, robe rail pivots, and such minor points? These parts require no more lubricant than the home medicine cabinet does. Or, why squirt oil on rubber window weather stripping where it not only ruins the rubber, but smears the glass and the adjacent trim parts as well?

Powdered graphite might ease the friction between the window glass and the runs or channels and, if used, it should be used sparingly. Body points that are difficult to get at to service, especially where the lubricant may contact the upholstery when it is being applied, should be lubricated with care and consideration. Lubricant that has been smeared on the upholstery or comes off on the wearing apparel usually results in a cleaning bill for someone to pay and is also an indication of low quality service.

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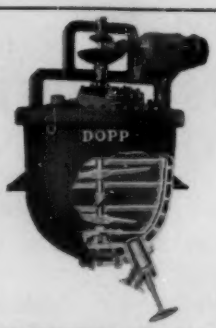

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